SANTA CRUZ BIOTECHNOLOGY, INC.

# gp91-phox (NL7): sc-130548

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Mox1 and the glycoprotein gp91-phox are largely related proteins that are essential components of the NADPH oxidase. The superoxide-generating NADPH oxidase is present in phagocytes, neuroepithelial bodies, vascular smooth muscle cells and endothelial cells. It includes a membrane-bound flavocytochrome containing two subunits, gp91-phox and p22-phox, and the cytosolic proteins p47-phox and p67-phox. During activation of the NADPH oxidase, p47-phox and p67-phox migrate to the plasma membrane, where they associate with the flavocytochrome cytochrome b558 to form the active enzyme complex. The p22- and gp91-phox subunits also function as surface $O_2$ sensors that initiate cellular signaling in response to hypoxic conditions. Mox1 and gp91 contain identical C-terminal sequence identity, yet they have distinct expression patterns. gp91-phox is expressed in eosinophils, neutro-phils, monocytes and B lymphocytes, whereas Mox1 is predominantly detected in the colon, with low expression detected in the uterus and prostate. Mox1 is also upregulated in vascular smooth muscle cells in response to PDGF stimulation, which collectively indicates that Mox1 may function analogously to gp91-phox, yet regulate the NADPH superoxide production in non-phagocytic cells.

## CHROMOSOMAL LOCATION

Genetic locus: CYBB (human) mapping to Xp11.4; Cybb (mouse) mapping to X A1.1.

## SOURCE

gp91-phox (NL7) is a mouse monoclonal antibody raised against amino acids 498-507 of partially purified gp91-phox of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

gp91-phox (NL7) is available conjugated to either phycoerythrin (sc-130548 PE) or fluorescein (sc-130548 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

## APPLICATIONS

gp91-phox (NL7) is recommended for detection of gp91-phox of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x $10^6$ cells).

Suitable for use as control antibody for gp91-phox siRNA (h): sc-35503, gp91-phox siRNA (m): sc-35504, gp91-phox siRNA (r): sc-61838, gp91-phox shRNA Plasmid (h): sc-35503-SH, gp91-phox shRNA Plasmid (m): sc-35504-SH, gp91-phox shRNA Plasmid (r): sc-61838-SH, gp91-phox shRNA (h) Lentiviral Particles: sc-35503-V, gp91-phox shRNA (m) Lentiviral Particles: sc-35504-V and gp91-phox shRNA (r) Lentiviral Particles: sc-61838-V.

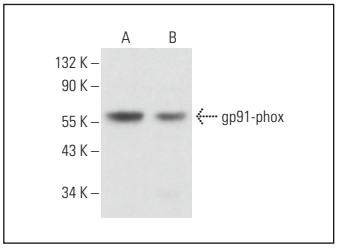
Molecular Weight of gp91-phox: 60/91 kDa.

Positive Controls: RAW 309 Cr.1 cell lysate: sc-3814.

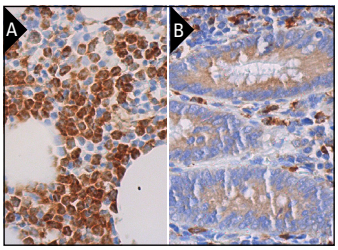
## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA




gp91-phox (NL7): sc-130548. Western blot analysis of gp91-phox expression in RAW 309 Cr.1 (**A**) and RAW 264.7 (**B**) whole cell lysates.




gp91-phox (NL7): sc-130548. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic staining of subset of hematopoietic cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of subset of lymphoid cells (**B**).

## SELECT PRODUCT CITATIONS


1. Kovács, I., et al. 2014. Comparison of proton channel, phagocyte oxidase, and respiratory burst levels between human eosinophil and neutrophil granulocytes. Free Radic. Res. 48: 1190-1199.
2. Hung, C.H., et al. 2015. Quercetin is a potent anti-atherosclerotic compound by activation of SIRT1 signaling under oxLDL stimulation. Mol. Nutr. Food Res. 59: 1905-1917.
3. Kovács, I., et al. 2015. Reactive oxygen species-mediated bacterial killing by B lymphocytes. J. Leukoc. Biol. 97: 1133-1137.
4. Lévigne, D., et al. 2016. NADPH oxidase 4 deficiency leads to impaired wound repair and reduced dityrosine-crosslinking, but does not affect myofibroblast formation. Free Radic. Biol. Med. 96: 374-384.
5. Koo, S.J., et al. 2018. Pentose phosphate shunt modulates reactive oxygen species and nitric oxide production controlling *Trypanosoma cruzi* in macrophages. Front. Immunol. 9: 202.
6. Chen, J.L., et al. 2020. Caveolin-1 in spinal cord modulates type-2 diabetic neuropathic pain through the Rac1/NOX2/NR2B signaling pathway. Am. J. Transl. Res. 12: 1714-1727.
7. Kawai, C., et al. 2022. Fine definition of the epitopes on the human $gp91^{phox}$/NOX2 for the monoclonal antibodies CL-5 and 48. J. Immunol. Methods 501: 113213.
8. Martinez, V.R., et al. 2023. Effect of the structural modification of Candesartan with Zinc on hypertension and left ventricular hypertrophy. Eur. J. Pharmacol. 946: 175654.
9. Zhang, H., et al. 2023. Involvement of NADPH oxidases in the Na/K-ATPase/Src/ROS oxidant amplification loop in renal fibrosis. Mol. Med. Rep. 28: 161.


## RESEARCH USE

For research use only, not for use in diagnostic procedures.